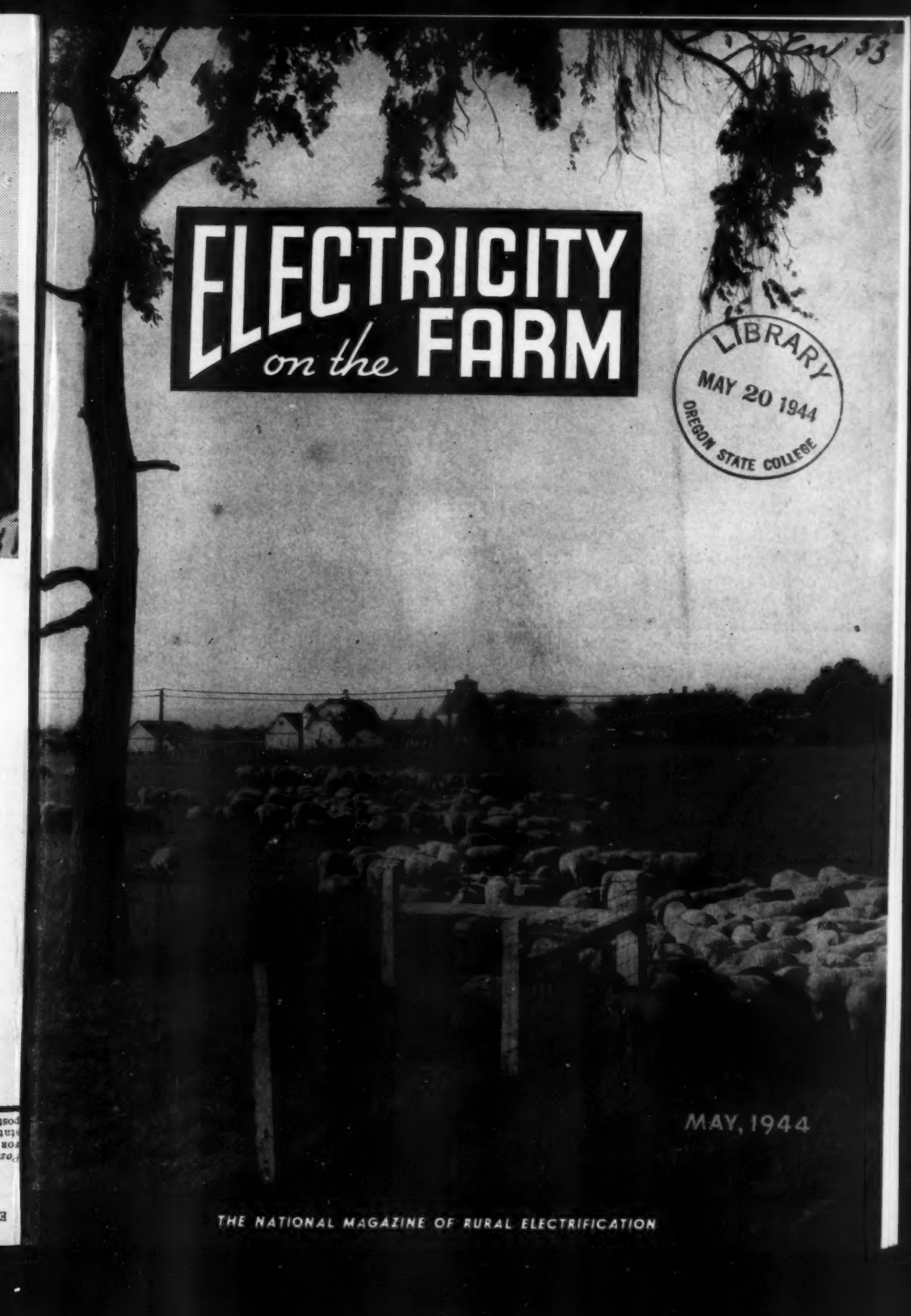
ELECTRICITY
on the FARM
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THE NATIONAL MAGAZINE OF RURAL ELECTRIFICATION

Controlled Rain

● Vertical turbine pumps are often used to supply the continuous flow of water through irrigation ditches.

● Overhead-spray systems, operated by electric pumps, help produce bumper crops despite dry seasons.

Irrigation will help you meet 1944 food production goals

Irrigation makes possible "controlled rain" whenever and wherever it is needed—for gardens, orchards, or pastures. Proper use of irrigation—*before* crops start to suffer from lack of rain will increase yield and improve quality.

In humid areas, irrigation may be needed only a few weeks out of the year, but those are vitally important weeks. Without irrigation, crops may fail; fruits and vegetables may be small; bud setting for the next season may be unsuccessful.

There are several methods of irrigation—overhead spraying, ditching, flooding, porous-hose, or subirrigation. The method used depends upon individual requirements.

Irrigation equipment is available for farmers who need it; consult the local Agricultural War Board. For information about the use of electric motors on the farm, write for Bulletin GEA-4187. *General Electric Company, Schenectady 5, N. Y.*

MOTORS FOR THE FARM

GENERAL ELECTRIC

Take a Tip from "BIG INCH" when You Select Your WATER SYSTEM

Adequate pumping capacity was the key to the success of this famous U. S. pipe line, too.

Make Sure of Adequate PUMPING CAPACITY

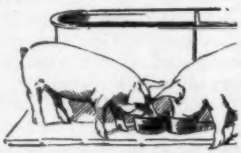
It's surprising how much water is used — and used profitably—for all farm and home needs when plenty of fresh, clean running water is always available.

Plan your water requirements liberally — and get a famous Myers Water System with *ample* capacity to give you plenty of water at all times for all needs. Provide enough capacity to keep water continuously before your livestock and poultry for maximum production. See that you have a system big enough to supply water generously for flushing cow barns, for washing utensils and other equipment, for spraying and all farm needs. In addition, get sufficient capacity for your many household uses — and for the all-important need of fire protection.

It costs little more to get this extra capacity right at the start. Plan now to save time and labor and increase production with a Myers of *ample* capacity for your future needs. Talk it over with your Myers dealer.

It Takes LOTS of WATER for *ALL* your NEEDS!

For each producing cow, 35 gallons of water are required daily — for watering, cleaning and sterilizing. Plenty of water brings 5 to 10 percent more milk.



Each hog requires 2 gallons of water daily. A hog can gain 25 to 35 extra pounds a season when supplied an abundance of clean, fresh running water.

100 laying hens need 10 gallons of water a day. An adequate supply of running water can increase egg production 10 to 20 percent.

Cooking, washing, cleaning and canning require large additional quantities of water. And who knows when a large extra supply may be needed for fire protection? It pays in many ways to get *adequate capacity* when you get a water system.

THE F. E. MYERS & BRO. CO.
684 Church St.
Ashland, Ohio

TAKE OFF YOUR HAT TO MYERS PUMPS and WATER SYSTEMS

FREE BOOKS

(1) New book for postwar water system planning. (2) Handy book on care and maintenance of pumps and water systems. Write for them.

42WS4

Editor's Chat

FARM REAL ESTATE

Near the end of the first World War when prices for farm produce were abnormally high, many farmers bought land at inflated prices. Most of those who did prefer to forget it. They were caught in the whirlpool of readjustment and sucked under.

The USDA Bureau of Agricultural Economics now reports land prices 15 percent higher on March 1st than they were a year ago, and 38 percent above the 1935-39 average. The 1943 sales were at a record level—even greater than 1919—with farmers making two-thirds of the purchases. Secretary Wickard warns that the behavior of land values now is very similar to those of the 1919 boom. He says, "A land boom is an insidious thing. People don't seem to be able to see it or recognize it until it is too late."

If one wishes to make a greater contribution to war production, or if present prices are enticing, it would seem to be good business to rent additional land or even to farm it on shares. If it is just a hankering for land one has, it will probably pay to remember the 1920's and subdue one's hankerer for a few years. Borrowing money to buy land in a boom may leave one without the land he now owns, when the boom is over. The almost inevitable crashes that follow booms are painful things.

JOB ANALYSIS

On the second level underground in the New York Long Island Railroad station is a constriction to human mobility resembling the neck of an hourglass. A year ago the station was done over—walls and floor of shining white tile—and right in the middle of the constriction a flower shop was installed. And just where the "neck" suddenly spread out into the train shed was a tiled cigar stand.

Twice daily at the rush periods the human sand pours into that hourglass neck from subways and streets. It squeezes through the neck with physical and mental anguish. The 5:15 is due to pull out. The pressure is terrific. It must provide fertilizer for the flower stand, and as the deflated humans expand into the station there are great inhalations which burn up cigars.

Last week "the neck" was given a further constricting inside lining of timbers, and behind it stone hammers set up a deafening din. One corner of the flower stand had been chiselled off. Today a sign appeared on the timbers "This space being widened for the convenience of Long Island patrons." It is probably costing someone $10,000.

Human beings, city or country, engineer or farmer, are wonderful things. But if you have any bottlenecks on your farm, we suggest that you make a job analysis of your problem before you build any tiled flower stands.

JUNE-JULY COMBINED ISSUE

In order to meet government restrictions on the use of paper there will be only ten issues of ELECTRICITY ON THE FARM in 1944. The June and July issues will be combined as will August and September. The June-July issue will be out about two weeks later than the usual June issue. The August-September issue will be printed in the middle of August.

POST WAR BUYING

We commend the common sense savings-for-post-war-buying program of the Broadlawn Knitting and Sewing Society described elsewhere in this issue. It is basically sound. In addition it has the "glow" of pleasant anticipation like the plans for a vacation in a longed-for spot. Each deposit renews the happy thoughts. And you can be pretty sure that after saving for several years for a piece of equipment and discussing its merits with others, those ladies will make wise investments. We would recommend it also for farmers with an "itch" for land.

4-H SCIENTISTS

It gives us pleasure to tell you elsewhere in this issue of the 4-H Club members who have won scholarship awards in the National Science Talent Search. 4-H members are trained to work toward a goal. The training is an exercise in education and in good habits. It is pleasing to have 4-H'ers demonstrate their ability in competition with high school boys and girls from all over the country. It is a further satisfaction to know that the farm is a first class training ground for scientists. It is becoming even more so as the knowledge and practice of science in agriculture increases.

—I'm proud I am a farmer!—

George Kable

ELECTRICITY ON THE FARM
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★ WARTIME STRATEGY ON THE FARM ★

He makes hay while the sun doesn't shine

"My electrically driven haydrier takes about all the weather hazards out of haymaking," says R. G. Williams, owner of a 600-acre farm near Wytheville, Virginia, "because I can now cut hay *between showers*.

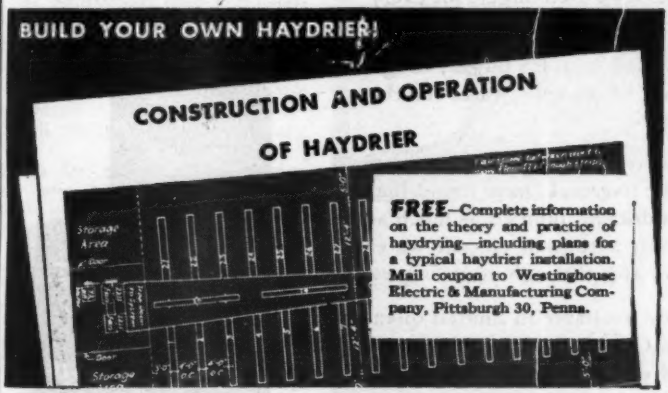
"I field-dry the hay about 5 hours—then put it right into the mow and turn on the electric blower. In 10 days to 2 weeks my hay is *perfectly cured*—a nice green color—rich in vitamins and proteins.

"My haydrier *paid for itself the first season*—in better hay and reduced spoilage!"

"**THIS MOTOR-DRIVEN BLOWER** forces air through the hay at the rate of 10 cubic feet of air per square foot of mow area. At 1½¢ per kwh for electricity, the power cost is only about *$1.00 per ton of hay*—a mighty small sum to pay for improved quality hay and the elimination of the usual loss in field-curing."

"**SEE HOW THE HAY PACKS DOWN** when it is barn-dried. This nearly *doubles* the capacity of my hay mow. Air from the electrically driven blower is distributed through the wood ducts on the mow floor. This hay is worth $10.00 more a ton. I don't sell hay—but I get that in more and richer milk from my dairy herd."

"**HERE'S A HANDY GADGET** that I built in my farm workshop. It's a home-made weather indicator, electrically connected to the weather vane on the roof. It tells me the wind direction and how fast the wind is blowing. I find it very useful in checking *weather conditions* before I spray the orchard."



FREE—Complete information on the theory and practice of haydrying—including plans for a typical haydrier installation. Mail coupon to Westinghouse Electric & Manufacturing Company, Pittsburgh 30, Penna.

"**I USE ELECTRICITY IN LOTS OF WAYS** on my farm. My Westinghouse electric milk cooler keeps the milk at just the right temperature—in every kind of weather. I also use electricity for pumping and heating water, for sterilising milk utensils, and for spraying one of my 35-acre orchards. Incidentally, I use my 7½ and 10 horsepower portable electric motors to drive the haydrier blower, spray pump and compressor."

Whenever you see the WESTINGHOUSE nameplate on electric farm motors, farm equipment and household appliances, you can always be sure of sturdy construction—economical operation—long, trouble-free life. *Westinghouse is the name that means everything in electricity.*

Westinghouse

Plants in 25 cities... Offices Everywhere

WESTINGHOUSE PRESENTS *John Charles Thomas, Sunday, 2:30 p. m., E.W.T., NBC. "Top of the Evening", Monday, Wednesday, Friday, 10:15 p.m., E.W.T., Blue Network.*

MAIL COUPON TODAY!

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(Dept. EF-54)
Rural Electrification, 306 Fourth Avenue,
Box 1017, Pittsburgh 30, Pennsylvania

Please send me *free bulletin* on CONSTRUCTION AND OPERATION OF HAYDRIER.

Name.....

Address.....

Don't Let Good Money Slip Through Your Fingers

There are many hard working, capable farmers who are letting a 25-cent piece slip through their fingers for every dollar they earn.

After working in the field all day long, it's mighty tough to stand at the old pump and lift tons of water for the livestock for hours at a stretch.

Farmers who thought they were doing a pretty good job hand pumping water for their livestock, have found that their meat, milk and egg production jumped as much as 25% after they installed a fully automatic electric water system. Don't let that money slip through your fingers.

Jet-O-Matic water systems are available in limited quantities now. Ask your nearest Goulds dealer to show you the many exclusive features of this popular, foolproof, compact, fully automatic electric water system, or *write us for complete descriptive literature* on Goulds Jet-O-Matic.

GOULDS PUMPS, INC.
SENECA FALLS, N. Y.

GOULDS
JET-O-MATIC
WATER SYSTEMS

"SNAP THE SWITCH" UTENSIL STERILIZATION

Electric Water Heaters and Equipment Sterilizers Aid Virginia Farmers in Producing Good Milk. Advantages of Electric Equipment

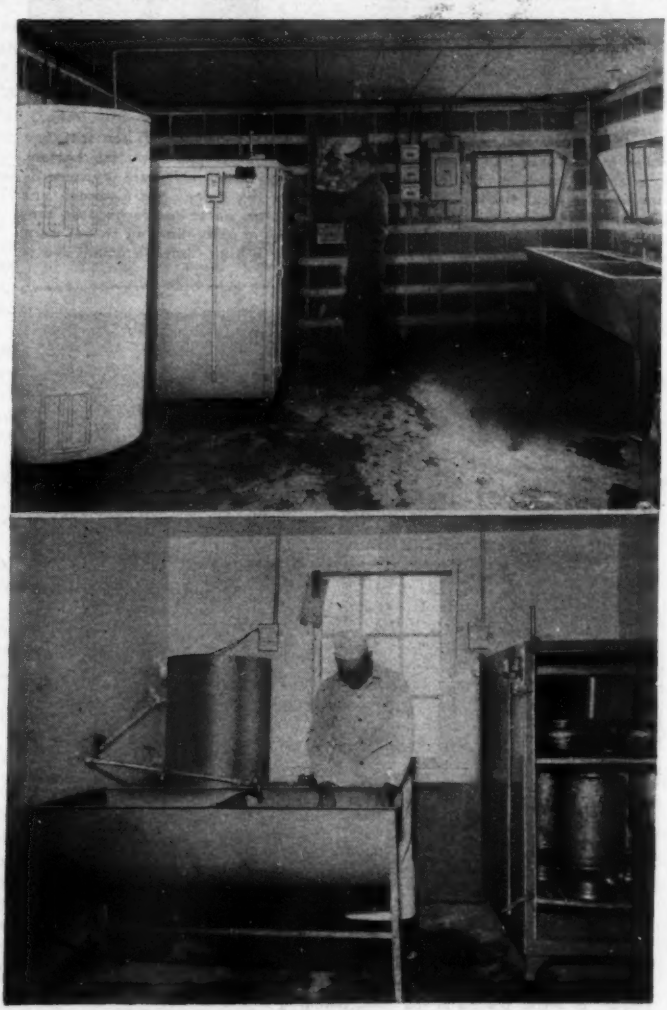
By L. L. KOONTZ
Appalachian Electric Power Co.
Bluefield, W. Va.

"SNAP the switch,"—that's just what more and more dairy farmers in Southwest Virginia are doing each year. They have discovered that by the use of electric-controlled steam or humidified hot air sterilizers, and automatic electric heaters, their problems are greatly simplified and definite results are consistently assured day after day.

Some have built their own home-made electric sterilizers. Others have converted their old conventional steam cabinets to electric operation by insulating them and installing automatically controlled electric heating elements. Still others have purchased commercially built sterilizers and electric water heaters which are manufactured in various sizes to meet the requirements of any dairyman.

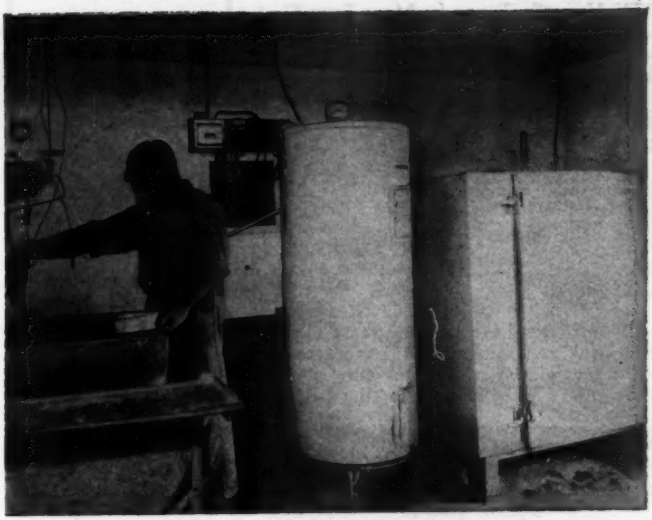
Both homemade and factory built sterilizers have proved quite successful and satisfactory. Here are a few of the advantages our many users have found in the electric method as compared to the old conventional steam boiler and cabinet method.

1. **Automatic Operation.** After

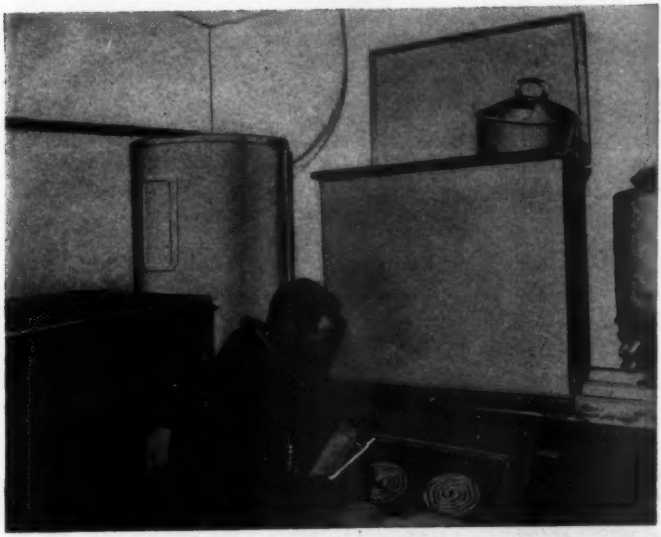


Upper: On the C. Henry Harman dairy farm at Tazewell, Va., the dairy utensils go direct from the wash vats at the right, where they are scrubbed and rinsed, into the electric sterilizer. They are automatically sterilized and remain in the clean, dry storage until the next milking time. Hot water is always available, day or night, from the electric water heater in the foreground. Mr. Harman has long since forgotten about the difficulties of high bacteria count attributable to poor equipment. He has factory-made equipment.

Lower: R. G. Williams of Wythville, Va. says: "I like the equipment because it is always ready when needed. I can go into the milkhouse at any time and there is plenty of hot water. It does a fine job, is quicker, easier and more convenient than the old method. The operating cost is reasonable. Our equipment has been in use four years and the only expense for repairs has been $7.50 for two heaters that got wet because some bolts worked loose in the drip pan."



The sterilizer on the right is a locally made unit of galvanized iron with two inches of rockwool insulation and with 6-500 watt strip heaters in the bottom. It is on the farm of L. J. Crowgey, Wythville. Such units are customarily formed in a local tinshop and assembled inside the dairy. Mr. Crowgey and his men like the sterilizer and its companion electric water heater because they save cutting and hauling wood and firing a boiler in early morning to get warm water for washing udders. They have never had a high bacteria count due to poor sterilization since using this equipment.



Jack Davis of Burkes Garden, Va., gets his hot water from the automatic electric heater shown in the corner at the left, and he sterilizes his utensils in the covered galvanized tank shown. The tank has been lifted off from the heater to show the two-element, 2,000 watt hot plate which heats the small amount of water placed in the tank, changing it into steam.

the utensils are washed they are placed directly in the sterilizer while wet. Push the button and forget it. The process is automatically controlled.

2. **Positive and Uniform Results.** The results are positive and consistently uniform, as the human element is eliminated from the operating procedure. 180° F. for 15-minutes or more is automatically maintained for each sterilization.

3. **Labor Requirements Are Reduced** to a minimum since the operation does not require the attention of an operator.

4. **No Fire to Watch.** No coal, wood or ashes to handle.

5. **Fire Hazards** are eliminated from dairy and surrounding buildings.

6. **Economical Operation.** Cabinets are well insulated to retain the heat and are thermally controlled to conserve electricity.

7. **Clean, Sanitary Wash Room.** No steam, dirt, odors, or dust.

8. **Clean, Dry Storage Space.** After the sterilization process is completed the utensils are dry and are allowed to remain in the clean dry cabinet between milkings, which prolongs the life of the utensils and keeps them sanitary.

9. **Cost of Boiler and Boiler Room** are eliminated.

10. **The Electric Equipment** has long life with low maintenance and depreciation costs.

The original cost of a factory built electric dairy sterilizer and automatic electric water heater are approximately the same as that of a steam cabinet and boiler. It is, therefore, the comparative fuel cost, plus the other advantages outlined above, that account for the trend to the electric method. Few dairy farmers are willing to consider firing a boiler or stove to obtain hot water when it is available day or night automatically for about one cent per four gallons from an automatic electric water heater.

"A hen just must have *laying ability bred into her* or she cannot shell out eggs at a profit."

DR. M. A. JULL
University of Maryland

Reader's Suggestion Forum

(In Two Parts; Part 2)

What Our Readers Think About Farm Electric Equipment for the Post War Period. New Equipment They Want. Reasons Why They Have Not Bought What Was Available

Why Don't We Buy What's Available

31. "The main reason why farmers have not used available electric equipment extensively is because their grandfathers got along without it and they make themselves get along without it. Our minds have not been modernized along with the times."—HUBERT BURKHOLDER, RR 3, Edon, Ohio.

32. "It must be proven to farmers that labor and time can be saved at small operating cost; that electricity is safe, and the more you use, the cheaper the rate. The only way is by demonstrations of the electrical equipment needed by each individual farmer."—SUSAN L. BROWN, RD 1, Walden, N. Y.

In asking the question "What is wrong with available equipment that keeps farmers from using it?", we had hoped to get some specific suggestions for improving or lowering the cost of present equipment. Some of these responses were included under new equipment suggestions. Most of the suggestions given may be classified under these headings:

1. Farmers do not make enough money to buy the equipment.
2. The equipment cost is too high.
3. Do not know where to get it.
4. A few said operating costs were high.

Written into those letters, also, was the fact that farmers usually buy the tractors, combines, barns and what they consider productive equipment before they buy bathrooms and electric ranges.

Things Now Available Suggested as New Ideas

One of the most significant things about the letters received was the many suggestions for equipment that has been on the market for a long time, but that the writer evidently did not know about. We are printing just a few of these with some of our own comments.

1. Why not a fool-proof immersion heater similar to a tumbler heater with heat enough for warming bath water, the clothes washer or stock tank?—J. A. P., D. C.

A good heater of this type (1,300 watts) has been available for over 15 years. See EOF—Dec '33, p 10; Feb '38, p 30; June '38, p 30; May '40, p 13. Unsafe heaters of this type were described in EOF Dec '40, p 21; Feb '41, p 24; Oct '42, p 24. The manufacturer of the good one has no farm sales outlets and does no farm advertising.

2. The utility company tells us when we wish to disconnect an electrical device to pull on the plug and not on the cord. But why don't they make a plug on which the fingers can get a grip? —R. M. S., Pa.

Many of such plugs have been on the market for many years. They cost a little more and are a little bulkier. Have not been popular with dealers or purchasers.

Attractive yard entrance made from an old buggy wheel cut in half with a hack-saw. We used the part with the hub mounted above, the other half placed in upright position to add height as well as charm. Electric light controlled by a switch at the house has regular outdoor type weather-proof wire and fixture as shown in the picture. ***Mrs. A. E. Holden***

3. I believe experimental and development work should be started on high frequency heating of the surface soil to kill weeds. A generator and heating unit could be mounted on a truck or tractor and moved slowly over the field.—W. H., JR., N. D.

Experimental work with such machines was conducted in about six states and Hawaii 10 to 15 years ago. The results were not encouraging. A large machine of this type has been in use experimentally on a California ranch in the past few years. The possibilities have not been exhausted. Electric heating and sterilization of greenhouse and plantbed soil is successful and has been written up in EOF many times. See EOF Feb '43, p 13; Aug. '41, p 23; Mar '40, p 9; Mar. '39, p 14; Jan '39, p 10; Feb '35, p 21; Nov '33, p 9.

4. A hay hoist that a man can operate and control from the load without an extra man.—G. S., Wis.

Because of the differences in barns a hay hoist cannot be made that can just be set in place and put to work. It is a matter of correct installation. A one-man hoist has been described a number of times in EOF. See May '43, p 16; Apr '42, p 9; June '38, p 17.

5. Anyone with small children —or without—would appreciate a plug-in washer of small size for doing a few daily pieces.—MRS. W. L., Minn.

In years past there have been several small electric washers on the market of the spin-dry type. They were still made just before the war. No sales outlets to farmers.

6. We need some form of insect electrocutor for orchard insects to be attached to a light outlet. Last spring our yard light attracted insects in almost unbelievable numbers. I tried every available source to get a trap but the only response I got was "I don't know."—MRS. J. O. S., Ill.

At least eight companies have made electrocutors or light traps for orchard insects. They do not advertise. We have had many articles about them in EOF. Some of the more recent were in Apr '43, p 15; Aug '40, p 5; June '40, p 27; Sept '39, p 26; June 37, p 15; Aug '36, p 12; Aug '33, p 18. An effective light trap is a pan of water hung under a light with a little coal oil on the water surface.

7. A single interchangeable, portable motor to use on different machines having about the same power requirements—a 1½- or 2-hp jack-of-all-trades motor."—V. B., Kan.

One of the first pieces of farm electric equipment put out many years ago was a motor mounted on a wheel carriage. Most motor manufacturers made them. Various types of bases for making fractional horsepower motors portable were also for sale. They were good jobs—some with starters, extra pulleys and motor protection. It added considerably to the cost of the motor. There were no local display rooms. The demand for them was so small that practically all manufacturers discontinued building them. Some manufacturers will now send you plans for building your own. There have been many such plans printed in EOF.

8. Needed badly by women to save both time and steps is a device to call men to meals or when needed at the house, to replace the old dinner bell."—MRS. M. B., Wis.

Small electric sirens have been available for many years. A few intercommunicating loud speaker systems were installed on farms before the war. See EOF May 1940, p 16. This equipment has not been advertised to farmers.

9. "I wish someone would invent a self-defrosting refrigerator," and "I'd like to see a wall or floor socket that a layman could install. When we had our house wired I didn't know where I'd need sockets because we had never used appliances. Now we have electric cords strung all over the floor. It is hard to sweep and I'm afraid for my mother. Her eyes are none too good."—MRS. M. T., N. C.

Several types of tack-on baseboard extensions were available before the war. They were easy to install. They must be used with judgment or circuits will soon become overloaded and endanger the safety of the house. To save the house and enjoy the full use of electricity, we might as well resign ourselves to the fact that inadequately wired houses are going to have to be rewired.

10. "Why not make a small cider press about as big as a cake mixer? Put in a couple of apples and out comes a glass of fresh cider."—R. M. S., Pa.

That's too fresh for some people. Small cider mills have been available for a number of years but I never saw one on sale. The new juice extractors of the past 5 or 6 years will take the juice out of apples, carrots, spinach, etc. Some also strain the juice.

11. "A small heating element that could be attached to an electric fan to speed up the drying of baby clothes in bad weather."—MRS. L. V. H., Kan.

Many of these combination fan heaters were on the market before the war. They ranged from $5.75 up. See EOF Dec '42, p 21; Nov '41, p 11; Dec '40, p 12; Jan 39, p 24.

Some Comments by the Editor

There is enough information in these reader letters to give all of us—farmers, dealers, manufacturers, utilities, educators, editors—something to think seriously about. They lay out the problems. There are some good suggestions for new and improved equipment; some on how to correct what's wrong with our methods; an indication of an unsatisfied demand for electrical equipment.

Most significant of all to me is the lack of knowledge about equipment that has been available. Farm people are not to blame for that. They have had no place to go to see the equipment. We do not know of one dealer in the United States who handles a complete line of farm electric equipment, or many who handle even a very limited line of "productive" electric equipment. Not all readers of ELECTRICITY ON THE FARM have been receiving the magazine for a long enough period to have seen the articles referred to. We keep telling the story over for the benefit of new readers and will do so again when equipment once more becomes available.

In the past few months we have been suggesting FARM ELECTRIC DEALERSHIPS to our dealer and manufacturer friends. Such dealers should be located at the edge of town where there is parking space. They should carry a complete line of wire and wiring supplies, fusetrons, motor protection devices, motors of all farm types, pumps, water systems, plumbing, motor operated machines such as feed grinders, green feed cutters, feed mixers, silo fillers, grain elevators, hay hoists, ventilation blowers, mow hay finishers, irrigation pumps and piping, wood saws, seed cleaners and scarifiers, pulleys, V-belts, bearings, jack shafts. Also milking machines, milk coolers, utensil sterilizers, water heaters, barn cleaners, fly sprayers and electrocutors, fence controllers, brooders, brooder heaters, thermostats, ultraviolet, germicidal and incandescent lamps, water warmers, time clocks, pig and lamb brooders, freezing cabinets, soil heating cable, farm shop tools and equipment. They might also include household equipment.

The dealer would have to have a genuine and unselfish interest in his community and his neighbors. He would have to know farming and electrical equipment adapted to it and be able and willing to advise farmers regarding the correct motor for different jobs and protection for them. He should know the water supply of the region and be able to recommend an honest, reasonably priced well driller. He should know what constitutes good adequate, safe wiring and have a man to install it or advise farmers. He should conduct demonstrations; let farmers try motors or feed mills. He should have a good repairman with repair parts on hand.

I believe farmers would go 25 miles to patronize such a dealer who was friendly, intelligent, helpful, and not too greedy; and I believe the dealer could make money. Possibly some farmers, or their boys returning from the war would make good dealers of this kind. They don't exist now.

If you have an opinion about such dealerships, write us about it. We would like to hear from you.

COWS

. . . Toward sunset, when with plash and moo,
The funeral-footed cows to milking drew,
And all the yard was filled with patient eyes,
Great licking tongues, and tail-tips swishing flies.

From Poet Laureate John Masefield's new book, "WONDERINGS (Between One and Six Years)."

Frozen "Red Flannel Hash"

Some Results of a Survey of 100 Farm Freezer Users in New Hampshire—Frozen, Cooked or Ready-to-Cook Foods Popular—20 cu. ft. Box Right for Four Persons

By **JOS. H. BODWELL**
Merrimac Farmer's Exchange, Inc.
Concord, N. H.

"ONE of the most delicious dishes which my wife takes out of our freezer locker is 'red flannel hash'." This amazing statement was made by L. J. Batchelder of Durham, one of the pioneer users of farm freezers in New Hampshire. "In fact," he continued, "you can freeze any food you want to save for future use, either cooked or uncooked—stuffed chicken ready to roast, cooked pies, fresh cream for whipping,—just to mention a few of the things we have frozen for ourselves. And that is why we have red flannel hash on call.

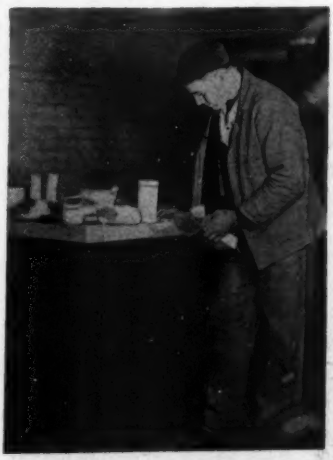
Freezers Have Many Uses

The farm freezer, originally thought of as only a receptacle for storage of meats (and perhaps fruits and vegetables) apparently had a great many other uses; so we checked into it, and found that New Hampshire farmers have been using their farm freezers in a great many new, original and different ways. Let's take, for example, chicken-a-la-king, a delicious concoction which friend wife tells us is made by laboriously combining the chicken and various other necessary ingredients, which takes considerable time to prepare. But it doesn't take much more time to make a large batch than a small one; therefore, why not make plenty and put some away for another time, with confidence that, if stored in the freezer, it will be exactly as good when taken out as when put in.

We have found that several farm freezer users already have discovered the smart idea of preparing several times the amount of food needed for one meal, using what was needed at the time and freezing the rest for future use. You can do the same thing with the plebeian New England baked beans, which take many hours to cook. Just let the beans cool, put them in a container and freeze them solid. These packages of frozen beans are then ready to use on future Saturday nights, requiring only a "warm-up" to be just as delicious and flavorful as the portion of the original batch you ate on the Saturday night when they were baked.

We found out what New England folks can do with this modern electric freezer, when the Public Service Co. of N. H. sent out a questionnaire to one hundred users of farm freezers. The questions we asked brought answers which proved to us that in the short space of time farm freezers have been used they have already grown out of their swaddling clothes and, from being a rich man's plaything have become a practically indispensable method of preserving the food grown and cooked on the modern farm.

Our answers showed that every one of the owners, as expected, used the freezer for preserving fresh meats and fish, but they also had added a variety which we had not thought of: smoked hams and shoulders, pickled ham, bacon (either sliced or whole) and salt fish. One user received a gift of 20 lbs. of "new-salt" fish which was not strongly salted. He wrapped it up and put it into the freezer; and, in the owner's words, "it was not hurt a bit."



Ed. Young, a Dover, N. H., freezer user, says: "The farm freezer is the best thing that ever happened to us."

Apparently, from the answers received, all types of small fruit have been stored successfully in the farm freezer, and every method of processing has been used. One user rolls or shakes blackberries and blueberries on a large plate with sugar so as to coat them thoroughly. Another large user stated that blueberries are best with a 45% sugar syrup added, after packing the berries in the carton. He believes, by doing this, that they hold their shape and flavor better. Either way, sugar or syrup, makes a good product. The best recipe for strawberries, in order to keep them firm and flavorful, was suggested by one of the users who has been doing it in a large way for several years. Here it is: Hull and wash the berries, add one pound of sugar to every four pounds of berries, put in a large pan, crush just enough to start the juice from the berries. Then let set for 30 to 60 minutes and package. Raspberries and blackberries are done similarly; but do not crush these berries, as they are soft enough to form their own juice. Quite a number of users say that frozen canteloupe is wonderful. Just cut the canteloupe in cubes, trim off the rind, and package without sugar.

Popular Products

The most popular frozen vegetables are peas, beans and sweet corn. Peas and beans, generally the hardest to can, are the easiest to freeze.

The consensus is that you must make sure to blanch vegetables properly and cool them quickly before packing.

Sweet corn, the most popular vegetable to be frozen, should be blanched about three minutes and then cut off the cob. This method retains a perfect fresh corn flavor. If corn on the cob is to be frozen, it should be blanched from 8 to 10 minutes so as to thoroughly heat the cob. In this way, one

will avoid "cob flavor," of which there have been some complaints.

Mushrooms put up in a 2% brine are excellent.

Those of our users who operate roadside stands and inns have found their farm freezers particularly convenient and profitable. Our survey shows that freezers have enabled owners to serve a variety of meals without the worry of spoilage of surplus.

Poultrymen with small flocks have found that instead of killing one or two birds at a time, or feeding them until there is a demand for them, are killing when the birds are in prime condition and storing them in their freezers until the price is right, or until they wish to use them.

Our survey also shows that most of the users are of the opinion that a 20-cu ft freezer is about right for the average family of four people. The best rule to go by is that the freezer should be large enough to store a year's supply of meats, fruits and vegetables for the family. An average person consumes about 200 pounds of these foods each year, and one cubic foot of locker space will store about 40 pounds of packaged foods. One should calculate his own requirements on this basis.

A freezer box of 20 cu ft uses only about 100 kilowatt hours of electricity per month. Most farm freezer users in New Hampshire agree with Ed Young of Dover, who says: "The farm freezer is the best thing that ever happened to us."

Farm Wives Plan Post-War Buying

By RAYMOND DONOVAN

WITH an eye to cutting down on their present spending and in an effort to help avoid inflation, members of the Broadlawn Knitting and Sewing Society are laying aside sums of money with the club treasurer to be spent for electric refrigerators, vacuum cleaners, toasters, electric irons, etc., after the war.

The club is composed of eighteen farm women of Pequannock Township, New Jersey. It was organized in 1928. The families of the eighteen members also do their bond buying through the club and in that manner members are credited with having purchased $4,000 worth of bonds or an average of $222 per member over a period of about two years. During the same period $300 was donated to the Red Cross and $300 to the Salvation Army, besides generous donations to other charities. The money for these charities was raised through socials, cake sales, rummage sales and sales of knitted and needlecraft work made by the members.

In a recent talk to club members, Mrs. Minnie Sullivan, President, said in part: "It seems that most folks are sitting back and waiting for the government to do all the post-war planning for all of us. It is a stupendous task and one that the women, especially organized farm women, can and will have to take a hand in if we are to avert a desperate depression after the war. Lots of us have more money now than we've ever had. It is not enough that we buy bonds. We must look ahead to the world after the war and use some of our extra dollars to head off any depression that might arise when thousands of men and women now working in defense plants and tens of thousands more now in the armed forces find themselves out of work."

The money each woman puts into the treasury for equipment they plan on buying is credited to her name by the club treasurer and placed in the bank in a separate account under the name of the club. The saving is done in this manner because it is done systematically, whereas if the women were to put the money in with their own bank account the money might get used for something else or might not even be deposited as they are near a bank only when they visit the city. It would thus be a hit or miss proposition.

The club treasurer keeps a record of how much money each member has deposited and for what equipment she is saving.

In a survey of members the question was asked: "What are you saving for?"

"How often did you say to defrost the refrigerator?"

Refrigerators High on List

Twelve members who never owned refrigerators said they were saving to buy that item. The other six members all owned refrigerators that they thought would still be in good condition after the war. All six of them agreed that they would purchase new refrigerators if drastic changes were made in design and performance of refrigerators after the war that would make their present ones look old and out of style.

All club members are in need of new electric irons and all members want new toasters. They have the necessary money for new irons and toasters but are making the old ones do until the government allows manufacture of new new ones.

Eight members are saving to buy vacuum cleaners. Five of the members already have the necessary funds but will not buy until they see what the post-war models are like. The other members all have cleaners that are still in good condition and which they expect will last them for some years.

The washing machine is a popular item with the club women. When this item was mentioned the women agreed that it was just about one of the finest investments they could find for the money they are saving. Most of the women stressed the labor-saving ability of the washer as the reason they were so popular. Second reason for popularity was the money-saving angle. Members who send clothes to the laundry say bills run from two dollars and fifty cents to as high as five dollars. These women figure that in a year a washing machine will save them enough money to pay for itself.

All Want Washers

Nine club members own washing machines. Seven of the machines are in good working condition and two under repair. All of the machines are six years old or older. All club members are saving toward future purchases of washing machines after the war. They expect the post-war automatic machines to have many improvements over pre-war washers, even to doing everything but hang the clothes on the line.

It was found that the electric ironer was a semi-popular item with the club women. Three members are saving for ironers.

None of the club members are at present ear-marking any savings for electric ranges although all expressed a desire of some day being able to afford one. They liked them because of the cleanliness and dependability. Reasons given for not ear-marking savings for ranges were: The house would have to be rewired to carry the extra load. Family too large to cook for all of them with electricity. The cost of current might be too much.

One woman thought that the fact that she wouldn't have to redecorate her kitchen twice a year, as she now does because of smoke smudge from the coal stove, would go a long way toward paying the cost of the electricity used. She also pointed out that an electric stove would save her a good many hours of woodwork scrubbing and curtain washing.

All members of the club have electric sewing machines that they swear by. And it was found that none of them would care to part with their present machines unless the after-war models were so highly improved that a change was necessary. One of the women, however, is saving through the club plan for an electric sewing machine for her daughter-in-law. Most of the women seemed to think that this machine should be the first purchase a bride marrying a farmer should make.

Eleven members are putting fifty cents a week away toward electric mixers. The other members own mixers in good condition.

Manufacturers might be interested in knowing that the women composing the above organization are basing their savings on the pre-war prices of the above items and expect many improvements . . . . . (More on page 21)

Electric Heat Tests Seed Potatoes

Standards recently published by the State Department of Agriculture, Sacramento, California, list three grades of approved seed potatoes. One is Certified Seed. Above that is a super-certified grade known as Foundation Stock Seed, and below it "War Approved Seed." The Foundation Stock Seed must have the very minimum of virus, bacterial and fungus diseases. The grower must start with approved seed, have only about one-tenth the evidence of disease permissible in Certified Seed in his two field inspections. Other growing and handling requirements are rigid. As a further check the Department of Agriculture makes a greenhouse growing test to determine whether current season infection has developed beyond a reasonable amount. The growing test period covers six weeks during which time the seed beds are held constantly at 65° with soil heating cable. The greenhouse readings are considered to be more accurate under controlled conditions, and reflect the exact percentage of disease shown.—Just one more use for controllable electricity in better agricultural production.

Facts supplied by C. L. Killam, Sacramento, Cal.

Greenhouse photograph showing potatoes in electrically heated beds six weeks after the seed was planted.

4-H'ers Win Science Awards

During the past several years the Science Clubs of America have made a talent search for high school students showing the greatest promise of scientific contributions to the nation. In 1943, 15,000 students entered the contest. Based on a three-hour aptitude test, a 1,000-word science essay and recommendations of their teachers, 40 top ranking entrants were chosen from this group. These 40 "most talented science students" were invited to Washington for five days with all expenses paid. While there, they had their final tests and interviews, visited the White House and other places of interest.

Charles Davidson of Fort Bridger, Wyoming, winner of one of two $2,400 Grand Scholarships, working with one of his electronic devices. Charles was a state 4-H rural electrification winner two years ago.

This year three 4-H Club members were among the 40 finalists. They were awarded more than one-third of the $11,000 in scholarships provided for the contest by the Westinghouse Electric & Manufacturing Company.

Charles Davidson, 18, of Fort Bridger, Wyoming earned one of the two top awards of a $2,400 Grand Scholarship. Two years ago he was state winner in the National 4-H Club rural electrification contest.

Mary Ruth Bond, 17, of Blossom Farm, Milton, New York, twice president of her 4-H Club, was awarded one of eight $400 scholarships and also named alternate for the girl's Grand Scholarship. Eleanor Springer, another 4-H'er of Edwardsville, Illinois, was granted a $100 scholarship.

All scholarships may be used in any degree-granting college or university of the recipient's choice, subject only to the approval of the special scholarship award committee of the Science Clubs of America.

Charles Davidson, top winner, is a country boy whose scientific interests include electronics, chemistry, microscopy, painting and biology. He was also captain of his high school football team and won a light-heavyweight boxing award. In his highly developed home shop, one of his projects is the design of an invisible infrared ray searchlight and electronic pick-up for military use.

Miss Mary Ruth Bond of Blossom Farm, Milton, N. Y. She won a $400 award and the alternate Grand Scholarship. She is an active 4-H member.

Milk Cooler Care

Milk coolers remain in better condition if they are used and operated all winter. If not used, they should at least be run for a few minutes every two weeks to keep the packing glands of the gas compressor oiled and tight. If you do not do this, you may lose your refrigerant and have to have it replenished by a service man.

It will prolong the life of your cooler if you drain it once a year, dry it thoroughly and give the inside and outside of the tank and the floor grid a coat of equipment enamel. If the tank is rusted, brush off the rust thoroughly with a steel brush, clean the surface and give it an undercoat of metallic zinc or aluminum paint.

Check your motor. If it needs cleaning, follow instructions in the June and July 1943 issues of ELECTRICITY ON THE FARM. Oiling instructions were given in the March and April 1943 issues. Use SAE 10W oil,—and do not over oil. An excess of oil injures the motor windings and collects dirt.

Keep belts just tight enough so they will not slip. Tighter belts injure the bearings and waste power. If your compressor uses two V belts, replace both when you replace one so they will pull together.

Keep the fins and coils of the condenser (radiator) clean and free from obstructions. If dirty or clogged, it reduces the capacity of your refrigeration unit and wastes power. Be sure that cool, clean air is supplied for cooling the radiator. A screened opening to the outside of the milkhouse may be desirable.

Avoid placing dirty cans or spilling milk in the cooler. Change the water in the tank often enough to keep it clean and sanitary.

Sign on a display of tomatoes in a vegetable market: "Don't squeeze me till I'm yours."—*Varieties.*

SPEED COUNTS AT Milking Time

Washing with hot water not only promotes sanitation but stimulates the let-down action.

Foremilking reduces bacteria count and is a check on the health and condition of the udder.

Teat cups on McCormick-Deering Milkers can be put in place quickly and the cow milked out quickly. Prolonged stripping after milking should be avoided.

SPEED is vital in many ways today—in war production, communications, transportation, and on the battle front. Research shows that speed also helps increase milk production. Since the milking or letting-down action follows hormone secretion, it is necessary that milking be completed quickly after the cow has been properly stimulated.

The gentle, thorough action of McCormick-Deering Milkers helps your cows let down their milk faster—and give more milk.

You can save valuable time, decrease the amount of strippings, and help maintain healthy udders by following these recommended milking suggestions:

1. Establish a uniform routine for feeding, time of milking, and order of milking. 2. Eliminate distractions in the barn at milking time. 3. Induce the cow to let down freely by washing udder with hot water (130°F.). 4. Have a definite, timed milking period; leave milker unit on cow only three or four minutes. 5. Strip at once after removing milker unit; use full hands and complete stripping quickly. 6. Take good care of your milker; keep it working properly; ask the International Harvester dealer for milker conservation suggestions.

INTERNATIONAL HARVESTER COMPANY

180 North Michigan Avenue — Chicago 1, Illinois

McCORMICK-DEERING MILKERS

Electrical Housekeeping

Edited by **GAIL MEREDITH**

Cellar Houses vs. Refrigerators

MISS BIGELOW, Rural Home Counselor for the Monongahela West Penn Public Service Company, whose studies on cooking and running water were published in the March and April issues, also found two women who were willing to count the trips it took and the minutes it took to care for perishable food their families use. They were Mrs. Ernest White of Pocahontas County and Mrs. Jay Heinzman of Lewis County, West Virginia.

Heinzman Cooling Record

There are two in the Heinzman family, and up until August 1941 they had been keeping food in a cellar house thirty-two feet from the kitchen work table for all except three months of the year. During May, June and July they used an ice refrigerator. Mrs. Heinzman found that taking care of their perishable foods involved her in a fifty-mile walk and took her about sixteen eight-hour days each year.

Until a body sees a figure set down in black and white, she probably hasn't any idea how much time a woman does spend rushing a pitcher of milk, a plate of butter, or a bowl of left-over beans into a cold place.

This is a six months' record of the work and time and money it took to keep food in their cellar house.

Work Record
Trips to cellar house. 2090
Distance ..... 25 3/10 miles

Time Record
Time spent in trips.. 60 hrs 54 min
Time spent cleaning cellar house ..... 6 hrs 40 min

Cost Record
Ice for three months..... $8.01
Value of food spoiled..... .70
Total $8.71

By the first of August, Mrs. Heinzman had a new electric refrigerator in her kitchen, and began counting the times she opened the refrigerator door, measuring the distance from the work table and sink to the refrigerator, and chalking up the cost of electric refrigeration. These records are for the first six months.

Work Record
Trips to refrigerator..... 4,009
Miles walked across kitchen 6

Time Record
Carrying, removing, putting in foods and cleaning—Total, 34 hrs 18 min

Cost Record
71 Kw-hr @ $0.052 per Kw-hr
42 Kw-hr @ .04 per Kw-hr $5.36

Mrs. Heinzman found that having the electric refrigerator just about cut in half the time she spent getting food out of the warm kitchen and reduced her walking from more than 25 miles to only six miles in six months. There was a difference in cost, too, of more than three dollars, a difference in favor of electric refrigeration.

White's Save Steps and Cash

There are five in the White family, two grownups and three children. They stored food on a screened porch, in a milk house 38 feet from the kitchen door, and in a cellar house, 108 feet, three doors, and a gate away from the kitchen. Their records for the six months from February to August were these:

Work Record
Had difficulty in churning ..... 10 times
Precooked food to prevent spoilage.. 17 times
Distance walked to cellar and milk house ..... 12 6/11 miles

Time Record
Trips to cellar and milk house ..... 18 hrs 38 min
Cleaning cellar and milk house ..... 3 hrs 10 min
Total ..... 21 hrs 48 min

Cost Record
Times food spoiled..... 49 times
Value of spoiled food.... $13.80

Buying an electric refrigerator made a considerable change in the family's habits. Up to this time they had kept one cow and were without milk part of the year. With the prospect of adequate refrigeration, they bought another cow. Two of the children who would not drink milk, now drink it cold. Ice cream appears for dessert four or five times a week. These are the records they took during the first six months they used the electric refrigerator.

Work Record
Trips to refrigerator..... 4,362
Distance walked to refrigerator ..... 9 10/11 miles
Increase 2c/doz. price of eggs sold, due to refrigeration.. $1.35
Now possible to keep cream better and make some butter for sale..... 9.27

Increased earnings due to refrigeration $10.62
Average home use of milk increased from 71 to 164 quarts a month.

Time Record
Time for trips to refrigerator (½ min per trip) ..... 36 hrs 21 min
Time to clean refrigerator 5
Total ..... 41 hrs 21 min

Cost Record
51 kw-hrs @ $0.045..... $2.30
100 kw-hrs @ .03 ..... 3.00
5.30

Miss Bigelow points out that these records show that Mrs. White increased her income by $19.12 in the first six months she used her refrigerator. This is because she escaped previous food losses of $13.80, and actually earned $10.62, which is $5.32 more than the operating cost of the refrigerator. She cut down the distance she had to walk about two and a half miles, but she increased the time she spent caring for the food by 19 hours and a half. Mrs. White explains that increase by those frozen desserts, by her more careful storing of eggs and cream, and by the increased milk from the extra cow.

"It raised the nutrition standards of the family," said Miss Bigelow, "offered protection to their health, and according to her own report, made Mrs. White's work much easier."

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Spring Cobblers

It is too early for short cakes, but cobblers are never out of season. Moreover, cobblers offer an excellent way to make canned fruit look different. Your cans of peaches, of cherries, of apples, all these are cobbler timber. But if I had my d'ruther, it would be blackberry cobbler, hot blackberry cobbler purple with juice, that I'd choose every time.

The recipe for cobblers is simplicity itself.

Sift together one cup of flour, two and a half teaspoons of baking powder, and half a teaspoon of salt. Work in two tablespoons of shortening, and add about half a cup of milk, keeping the dough soft enough to stir. Put two cups of blackberries, partially drained, in the bottom of a baking dish. If the berries were canned without sugar, sweeten them to your taste. Spread the dough over the berries, and slit it here and there to let the steam through. Bake for three quarters of an hour.

Fresh Jelly Roll

Fresh jelly roll is pretty generally popular, too. The one I make the oftenest calls for

⅞ cup sugar
⅞ cup flour
1 tsp baking powder
¼ tsp salt
½ tsp flavoring
4 eggs

I put the eggs in the large bowl for my electric beater and beat until they are light and lemon colored. Then I begin pouring in the sugar with the beater still going. I keep on beating until the mixture is thick and smooth.

While the mixer beats the eggs, I sift the flour, measure it, then sift it again with the baking powder and salt so it is ready to fold into the eggs and sugar when they are mixed. I do this by hand with a flat wire whip. Then I add the flavoring.

I bake the cake in a wide shallow pan lined with greased paper. It needs a hot oven, 400 degrees F, but the baking takes only about 15 minutes. As soon as the cake comes out, I turn it bottom side up on a towel sprinkled with confectioners sugar, and roll it up as tight as I can. I leave it wrapped in the towel until it begins to cool. Then I unroll it hurriedly, spread it with grape jelly, and roll it up again, wrapping it in the towel and letting it stand until time for dinner.

Plant Calcium, Too

"Keep an eye on calcium," advises Dr. Henry C. Sherman, chief of the Bureau of Home Economics and Human Nutrition. "Calcium is a food value very likely to be short when a family's meals are otherwise up to good nutrition standards."

There are four ways to do this, Dr. Sherman suggests.

1. Include as much milk and milk products in daily meals as war-time conditions permit, and waste none.

2. Make good use of other sources of calcium. Greens from the garden can be a pretty good number-two source of calcium. A few greens, such as spinach, chard, lambsquarters, are not on the calcium list because, while they contain considerable calcium, the body does not use it.

3. Store up calcium by getting liberal amounts in food when possible. The body has a special storage place in the bones for extra supplies.

4. Have some idea of calcium arithmetic.

The National Research Council, says Dr. Sherman, recommends for children 1,000 to 1,400 milligrams of calcium each day; for adults 800. A cup of milk, half a

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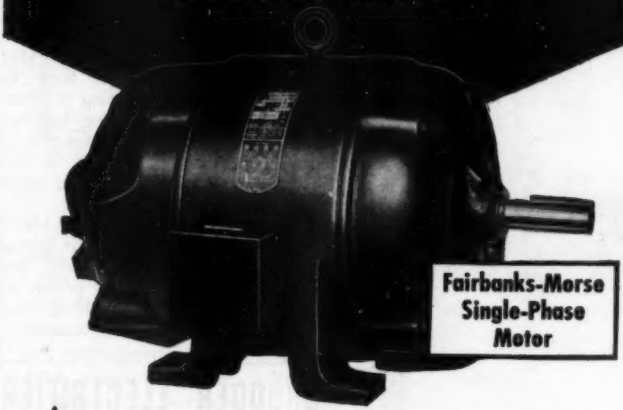
pint, provides 265 milligrams. Cheddar cheese packs so much calcium in small space that an ounce provides about 250. An average serving of turnip greens provides about 280 milligrams; kale, 180.

In olden days the inhabitants of Hillsboro, New Hampshire, consisted chiefly of Irish or Scotch Presbyterians and they early adopted the following custom. As soon as their fields were planted and sown their pastor, accompanied by the elders, deacons and farmers went from field to field offering up a short prayer over each that they might receive the fruits of their labors in a pleasant harvest. One day while engaged in the pious perambulation they arrived at a field where the parson stopped, took a keen eyed survey, and after some hesitation said, "My friends and brethren, it will be of no use to pray over this field till there has been more fertilizer spread upon it; for otherwise even the prayers of a righteous man however fervent cannot be effectual."

Here's a "Hired Hand" for Routine Work!



A Fairbanks-Morse General Purpose, Single-Phase, Induction Motor is the most efficient "hired hand" that you can have around your farm!

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Ask your dealer about Fairbanks-Morse Motors, single-phase or polyphase, all sizes—or write Fairbanks, Morse & Co., Chicago 5, Illinois.

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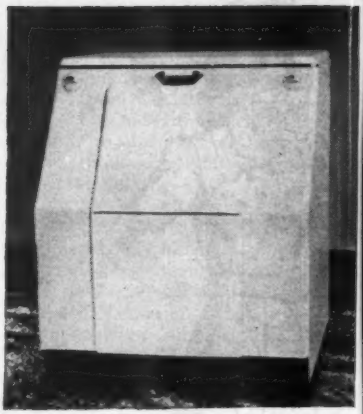
595 OAK STREET, KENDALLVILLE, INDIANA

From Hamper to Clothespins



Before the war there were several manufacturers making washing machines that take in a load of dirty clothes, soak them, wash them, rinse them, and shake them nearly dry without having anybody get her hands in the wash water at all.

Lou Benton has one in her basement, and she thinks no more of going down and doing a washing than she does of running upstairs to make the beds. It is less work by far.

With the washing machine connected permanently to the plumbing, both hot and cold water pipes, and to the drain, she never has to carry water to fill or empty the machine. There's no water slopped around on the floor to mop up when the washing is done. In fact, she says washing has become such a tidy job that she is going to put her washer in the kitchen or bathroom in her next house.

There is no guess work about whether the wash water is going to be too hot or too cold, nor whether the washing is going on long past the right washing time for the clothes in the machine. Both the temperature of the water and the washing time is automatically controlled.

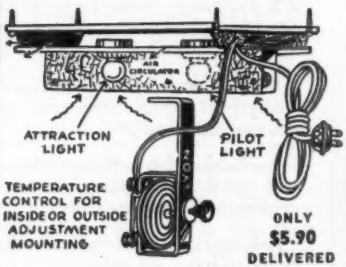
If Lou is washing a tub of sheets, she doesn't want the same temperature she would have for rayon undies, silk slips, and night gowns, nor would she wash the two loads the same length of time.

All she has to do to make sure that the water is the right temperature and the clothes are washed the right length of time is move a couple of dials on the face of the machine—the one for temperature and the other for time.

These dials control the mechanisms that mix the hot and cold water to just the right temperature, and time the wash and each rinse exactly.

After she puts a load of clothes in the tub, sets the dials, and starts the washer, all she has to do is add soap powder and water softener. It is the truth there is no more work to getting her

BROODER ELECTRIFIER



ONLY $5.90 DELIVERED

Ideal for 100 chicks in hover 30" x 30". Thousands in use. Excellent heat distribution and temperature control. Order from ad. Send for Catalog of electric supplies and Debeakers curing cannibalism.

LYON RURAL ELECTRIC CO.
Headquarters: SAN DIEGO, CALIF

Get A
Gardner Hi-Line Controller

Save time, get set for more milk, beef or pork production with a Gardner hi-shock hi-line controller — the best engineered electric fence unit. Thousands are in nation-wide use, many have given six years of successful service. Ask your dealer today, or write direct for free folder.

For Sale Now!

Gardner Mfg. Co.
5313 Kansas St. Horicon, Wis.

washing done than that!

The machine takes over. She can go back up stairs or sort the next load, remove a stain or two, or sew up a forgotten rip.

The automatic controls on the machine drain the water after the washing is done, refill and drain the tub for three separate rinses, each at its own temperature, whirl the clothes nearly dry, and finally shut the washer off.

When Lou opens the washer door, she finds the clothes ready to hang on the line or to iron. She doesn't even have to wash out the tub. The last rinses have sprayed it clean and the final spin that whirled the water out of the clothes and drained it away, left the washer clean, too.

After the war, these machines will be made again.

Plan Post-War Buying

. . . . . (Here from page 13)

in such household equipment.

Lest any reader be led into thinking by the above that the members of this organization have a selfish motive in saving for future purchases of these household necessities it must be said that such is not the case. The women, most of them with sons and daughters in the armed services, are looking ahead with a view to softening as much as they possibly can, the letdown in production when the war ends. Many of these women in addition to their farm chores are caring for children of war workers, giving blood to the Red Cross and helping that organization in its work, besides pitching in in many cases and doing many a man's job on the farm when the necessity arises. They will be entitled to all the leisure their after-the-war purchases give them.

Avoid These Wiring Hazards

Some of the unnecessary hazards in the use of electricity which farmers should avoid were enumerated by Mr. L. P. Dendel, representing 60 Michigan fire insurance companies, at a rural electrification conference at Michigan State College. Some of those to avoid were—

Two few circuits and too small wires, resulting in overloading of circuits and over fusing.

The use of unapproved materials and appliances, particularly home-made equipment.

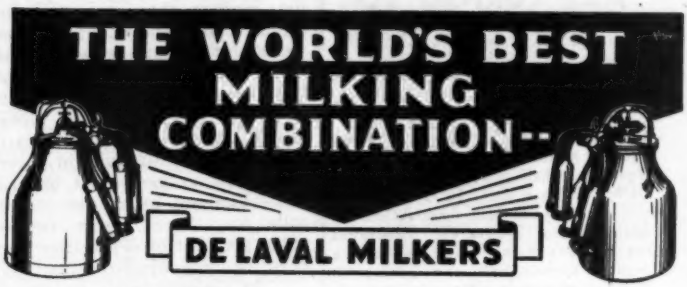
The placing of large wattage lamps in a horizontal position where combustible dust may accumulate on the neck of the bulb. Lamp bulbs should always be used in a vertical position in dusty places even though it involves a more expensive fixture. In hazardous locations they should be enclosed in a glass globe.

The omission of proper grounding of conduit and armored cable where it is used, which in addition to increasing the fire hazard also causes the death of livestock.

The use of ordinary lamp cord or substandard wire in making extensions in moist places or where the wire is subject to damage.

The use of motors without a control switch having an approved overload device, or a protective device built into the motor.

Making love is like making pie. All you need is crust and a lot of apple sauce.



De Laval Magnetic *Speedway* Milker

The De Laval Magnetic Speedway is different and better in principle and performance. It is the only milker having pulsations for each unit created and controlled at the pulso-pump by magnetic force, thus assuring perfect uniformity of milking. It is the world's best, fastest and cleanest milker.

De Laval *Sterling* Milker

The De Laval Sterling provides De Laval quality milking for small herds. The Sterling Pulsator has only two moving parts and provides precise milking speed and action that pleases the cow. The Sterling Single or Double Units can also be used on any other single pipe line installation.

PLUS

THE DE LAVAL *SPEEDWAY* METHOD OF FAST MILKING

1. *Be regular*—start the milking at the same time each milking.
2. *Have everything in readiness*—avoid unnecessary noise, confusion or distraction of any kind in the barn at milking time. Study your milking routine to eliminate every unnecessary move.
3. *Preparation of the cow*—Thoroughly wipe the udder of each cow, just before it is her turn to be milked, with a clean cloth which has been immersed in warm water (130° F.) containing 250 parts per million of available chlorine. Follow immediately with Step 4.
4. *Use of the Strip Cup*—Next, using a full hand squeeze, draw a few streams of milk from each quarter into strip cup. Inspect for abnormal milk; if present, milk cow last. (Steps 3 and 4 induce rapid let-down of the milk.)
5. *Apply teat-cups immediately after using Strip Cup.* Hold and apply teat-cups properly so that no vacuum is lost and least amount of air is admitted.
6. *Teat-cups should be removed from cow at end of 3 to 4 minutes.* Hand stripping should be employed chiefly for purposes of inspection, and should consist of only a few full hand squeezes from each quarter. Do not prolong hand stripping. Machine stripping can be done just before removing teat-cups by massaging each quarter briefly.

BACK UP OUR FIGHTING MEN . . . BUY BONDS!

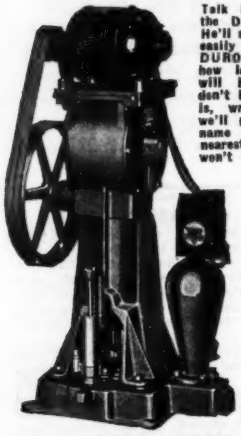
THE DE LAVAL SEPARATOR COMPANY
NEW YORK 165 BROADWAY · CHICAGO 600 FRANKLIN ST. · SAN FRANCISCO 61 FREMONT ST.

Storms
MAY ROAR
BUT THEIR WATERS
ARE TURNED TO
SERVE YOU

Yes, by simple twist of the wrist you can have as much of this water as you want, when and where you want it.

The renowned DURO Pump and Water System makes all this possible. Designed for shallow wells or deep wells, DURO delivers water in large quantities to increase farm production. A DURO Water System also modernizes the farmer's home by giving him a modern kitchen, bath and laundry. It does all this year after year dependably, economically, and with the minimum of care and attention. And you'll be amazed at the time and work it saves you.

SEE THE DURO MAN



Talk it over with the DURO dealer. He'll show you how easily you can have DURO benefits and how low the cost will be. If you don't know who he is, write us and we'll give you the name of the one nearest you and you won't be obligated in any way. New installations now available under the farm order.

THE DURO COMPANY
Dayton 1, Ohio

DURO
Water Systems

Grass a Perfect Feed

The Jersey Bulletin recently printed an article by R. H. Lush on this subject from which we quote:

"Grass is called a perfect food. Very tender grass contains 23 times as much vitamin A as carrots, 22 times as much vitamin B2 as lettuce, nine times as much B1 as leafy green vegetables, and 14 times as much C as tomatoes and citrus fruit. All pastures do not have the nutritive value described above. Legumes in general contain more calcium and protein and are considered of higher value for feeding than grasses. But recent reports show that the same variety of legume grown on different soils may give different results when fed. At the Tennessee Experiment Station, red clover grown on fertile soil gave nearly twice the rate of gain in calves as red clover grown on infertile soil. Grasses grown on fertile soils may have higher feeding value per unit of dry matter than even legumes raised on poor land. . . . In Georgia, cows on permanent clover pastures treated with limestone and phosphate produced a 100 percent calf crop. Only 50 percent of the cows on native unfertilized pasture produced calves."

A few years back, pastures were looked upon as something we could afford to let grow on lands too wet or poor to cultivate. Fertilizing them was reckless. Irrigation of pastures is still considered uneconomic by most farmers. It will not always be. If young grasses are our best feeds, they merit every consideration of seeding, soil, drainage, fertilization, irrigation, rotation. Where does electricity come into this picture of good management? Well, perhaps in those "little things that make the difference," such as pumping for irrigation where there is a good water supply available, electric fences for easy pasture rotation, the ensilage cutter for getting those young grasses into a silo for winter feed, or the blower in the mow hay drier for preserving them as first class hay. You can find progressive farmers someplace NOW who are using every one of these "little things" to enhance their farm profits.

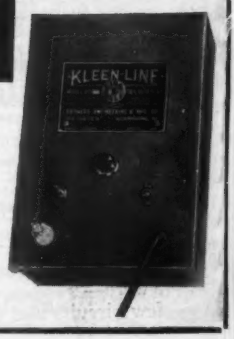
Reliable Motors

"Surveys recently made of required services on farm electric motors during the first year of the war, indicated that only 5% required repair or replacement of brushes; only 1.4% had bearing troubles; 1.4% had to be rewound, and motor replacements amounted to only ½%. These repairs seem insignificant when compared with the 10% or more of overhaul jobs needed each year on our farm tractors, trucks and automobiles. Surely our farm electric equipment has become as faithful an ally in war as it has been in the past a faithful servant in peace."

PROF. H. B. WALKER, Head,
Dept. Agric. Engineering,
University of California

Ed. Mitchell says: "There's one thing I like about hens. You don't have to milk 'em twice a day just to get a few eggs."

New! ELECTRONIC FENCE CONTROLLER
Kills Weeds



The KLEEN-LINE Controller is as modern as today's fighting equipment.

Has two electrical outputs on the fence wire: one gives a strong, safe shock to hold animals, the other saves labor and upkeep by killing all weeds touching the wire.

Proven by exhaustive tests on hundreds of farms.

Investigate this Electronic Weed Killing Fence Controller today.

C. A. McDADE COMPANY
6526 HAMILTON AVENUE, PITTSBURGH 6, PA.

Questions and Answers

Metallic Zinc Paint to Stop Rust

▶**Question:** *Please tell me where I can obtain the zinc paint mentioned in your article "How to Save Galvanized Roofs" in your February issue.* B. G., Tenn.

▶**Answer:** Most good paint stores carry it, or can get it. Ask for U. S. Bureau of Standards specification paint TT-P-641. If you cannot get it locally, write American Zinc Institute, Inc., 60 E. 42nd St., New York City for their booklet giving a list of manufacturers and distributors.

Wheel for Corn Sheller

▶**Question:** *Where can a new wheel for a corn sheller be purchased?* L. J. E., Wis.

▶**Answer:** If your corn sheller is of a standard make you should have no difficulty in obtaining a new wheel through your dealer, distributor or manufacturer. All companies are given permission to maintain an adequate stock of repair parts and you need no priorities to obtain them. If not a standard make, some other sheller wheel might fit.

Electric Rates

▶**Question:** *I enjoy your magazine very much as it comes from month to month, and in many cases electricity is a farmer's best friend. However, in the March 1944 issue there is an article on electric stoves compared to coal and wood in which to me that in someone's zeal to sell electricity they must have made up their figures. The electric company tells me that farmer's rates are the cheapest there are for private use, but the lowest I can get is 3c per kw-hr. Where does the writer of that article get those rates?* M. L. H., Mass.

▶**Answer:** It is always questionable whether we should print actual electric rates in our magazine because it is not possible to have the same electric rates all over the country. The rates printed in our magazine on page 16 of the March 1944 issue were actual rates of the Monongahela West Penn Power Company in West Virginia. The fact that these rates are cheaper than what you pay does not necessarily mean that the Power Company is over-charging you. It merely means that in some places the cost of generating electricity or of transmitting it and delivering it to patrons is greater than in other sections. As an example, I am myself paying about twice as much for electricity on Long Island as I did when I lived in Maryland. Those W. Va. plants have cheap coal mined at their door for generating electricity.

The article in question still has considerable value for you. It gives the actual number of kilowatt hours

Thousands of people have used this 48-page guide to help them make a wise investment in a pump or complete water system.

This FREE illustrated guide tells you how to estimate your water requirements; how to select the right pump to meet peak load demands; how to plan the well; how to protect the water supply against contamination; and gives you important information about piping, storage tanks, and accessory equipment. Send for YOUR *Free* copy NOW! Write . . . THE DEMING COMPANY, 544 Broadway, Salem, Ohio.

DEMING JET PUMP

For wells where total lift is from 15 to 120 ft. Capacities from 200 to 600 gal. pr. hr. REMEMBER the Deming line includes ALL types of shallow and deep well pumps to meet ALL requirements.

DEMING WATER SYSTEMS

Grind Your OWN Feed!

WITH A VIKING HAMMER MILL

SAVE WORK
—just fill the hopper and snap the switch. It grinds automatically while you do other work.

SAVE TIME
—save waiting for the grinder truck to come around—or save hauling feed to town and back again.

SAVE MONEY
—grind for as little as one cent per 100 pounds! You'll have fresher, BETTER feed when you grind your OWN.

RIGHT NOW
—a few Viking Mills are being made. Get yours, no priority needed. Write TODAY for full information.

Viking
MANUFACTURING COMPANY
228 WASHINGTON ST., JACKSON, MICHIGAN

TRUMBULL *ELECTRIC* POULTRY EQUIPMENT

Designed and Constructed for Dependable Results

Our aim is to produce Equipment that will SAVE LABOR and DO A BETTER JOB AT LESS COST WITH ELECTRICITY. We invite your inquiry.

THE TRUMBULL ELECTRIC MFG. CO.
1012 Woodford Ave., Plainville, Conn.

used. You can apply your own rate to those kilowatt hours and see how much it would have cost you under the same usage. It might still be cheaper than a wood or coal stove. On the other hand, if it were more expensive and the other advantages of electric cooking did not seem worth the difference in cost, you would at least know where you stand before making the investment in any new cooking equipment.

Baled Hay Elevator

▶**Question:** *I want an elevator to put baled hay in the mow.*

I wrote the Agricultural Engineering Department at the University of Missouri, and they told me you might have magazines with such plans in them. If so, I would like to have them. A. R. B., Missouri

▶**Answer:** Under separate cover we are sending you a copy of the September 1943 issue of ELECTRICITY ON THE FARM which has plans for an ear corn elevator on page 6. We do not have these detailed plans for a baled hay elevator but you can follow the same plans except that you should use two chains and make the elevator chute wide enough to take the bale of hay. The flights should be spaced on the chain about 18" further apart than the length of a bale of hay. You will need a 1-hp motor and I would suggest that pulley No. 4 be made 12" in diameter.

Electric Curry Comb

▶**Question:** *Could you please inform me as to whether or not there exists a manufacturing company who are makers of electric curry combs or electric cow brushes?*

J. M., Minn.

▶**Answer:** I have never known of any company that makes electric curry combs. The Eureka Vacuum Cleaner Company of Detroit did make special currying nozzles for portable vacuum cleaners a number of years ago. These currying tools could be used in connection with most any type of portable cleaner but preferably a small tank type cleaner which could be carried on a shoulder strap.

Water for Cooling Milk

▶**Question:** *I am building a milkhouse and would like to have some information on getting water to it for cooling milk. I have a deep well about 125 feet away from the milkhouse, which gives 50° F water. I am wondering if it would be practical to lay the pipe in a 4" tile to provide a dead-air space in order to keep the water cool when the ground is warm in the summer. I would like to know about how much the water would be warmed with this arrangement in that distance.*

Would also appreciate any other suggestions you might give me in this matter, and thank you.

E. O. W., Md.

▶**Answer:** There is only one way I know of to find out how much the water would be warmed up in passing through your 125 feet of pipe. That is to measure it. There are so many different factors involved that it is almost impossible to figure it out. My guess is that if you use 1" pipe, the water would be warmed 3 or 4 degrees by the time it reached the milk cooler from your well.

If you would keep your tile free from drainage water so it would be dry inside and have the ends plugged so there would be no circulation of air, you would save some rise in temperature of the water. If the tile, however, had water in it you would probably lose more than you would gain.

You asked for other suggestions. If you are selling market milk you should have an electric milk cooler. Starting with water that is 50° in the well, you would be doing remarkably well if you got your milk down to a temperature of 60°. That is not cold enough for a good job of cooling. It is better than no cooling but if you are paid on the basis of quality or if your milk has to be transported some distance, or if you sell at retail to consumers, I think you will find a milk cooler to be a profitable investment.

Bean Sorter

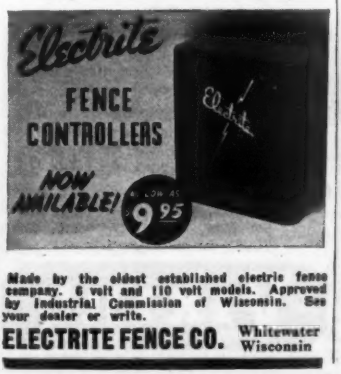
▶**Question:** *Who makes a bean sorting machine that works on the photo-electric cell principle?*

▶**Answer:** The following companies make electric bean sorting machines using the photoelectric cell principle: Electric Sorting Machine Co., Grand Rapids, Mich.; and Photobell Corp., 45 Ann St., New York, N. Y.

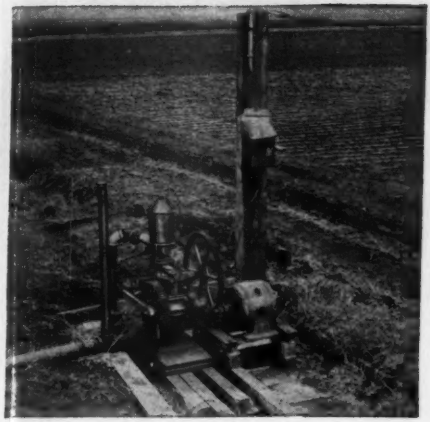
Correction—Farm Fire Protection

On page 22 of our February issue it was stated that a 2 hp motor on a 1½" centrifugal pump would give 50 pounds pressure per square inch. It should have read "10 hp motor". Since motors of that size are not practical on many farms, particularly just for standby use, either a special engine-driven fire fighting unit (many are in use now at air fields, etc.) or a tractor or car driven pump would be most practical.

Write for a free copy of this kitchen-planning booklet.
Now is a good time to PLAN your "kitchen of tomorrow." In such planning, your range will play an important part—and that is why we suggest you write for a free copy of a new Monarch booklet just issued, full of model-kitchen pictures, entitled "Tomorrow's Kitchens." When writing, please also mention the type of range you are now using.
MALLEABLE IRON RANGE CO.
1244 Lake Street Beaver Dam, Wis.
MONARCH RANGES
are built to last


Electrite
FENCE CONTROLLERS
NOW AVAILABLE!
as low as
9.95
Made by the oldest established electric fence company. 6 volt and 110 volt models. Approved by Industrial Commission of Wisconsin. See your dealer or write.
ELECTRITE FENCE CO.
Whitewater Wisconsin

SANI-MATIC
ELECTRIC
WATER HEATER
FOR THE MILK HOUSE
Exclusive Advantages:
● TEN FULL GALLONS* of HOT WATER available THREE TIMES DAILY and the LAST DROP is as HOT AS THE FIRST.
● EASY ACCESS FOR CLEANING.
*Also 18 Gallon size available.
Write today for descriptive folder.
THE SCHLUETER CO.
JANESVILLE, WISCONSIN



Water for Celery

With a three-horse-power motor harnessed up to a double action five-inch shallow-well pump, Jake Kooyenga, Orland Park, Illinois, pumps water into his overhead irrigation system and thereby insures himself a fine crop of celery every year. The water is drawn from a reservoir 100 feet away from the pump. The reservoir is 40x60 feet in size, and 20 feet deep. The surrounding district, drained by tile and open ditches, pours the supply into the reservoir.

In order to have "clean" land for the celery, the sprinkler pipes are moved to a new area every season. They are then reconnected with the main that extends from the pump along the entire length of Mr. Kooyenga's commercial truck farm. "I came here and rented land when I had nothing," said Mr. Kooyenga. "Now I own the land, fifty acres of as good garden land as lies outdoors." GEORGE R. HARRISON

Tribute to Electricity

At the fall meeting of the American Society of Agricultural Engineers, Prof. E. G. McKibben, Head, Agricultural Engineering Department, Michigan State College, gave his ideas of the ideal post-war farm tractor. A prominent feature was an engine with the *reliability of an electric motor.* Other provisions were that the engine should be removable for use on stationary jobs, and it should have an indicator showing when the right amount of gas is being used. Some other suggestions were for a manure loader, a power pruning device and a fodder harvester for turning fodder into bedding material.

"We must beware of trying to build a society in which nobody counts for anything except a politician or an official, a society where enterprise gains no reward and thrift no privileges."—WINSTON CHURCHILL.

EVERY FARM SHOULD HAVE
VOGEL
FROST-PROOF HYDRANTS

Running water every day of the year. Nearly 100,000 in use.

See your nearest plumbing supply houseor write us direct for complete information.

JOSEPH A. VOGEL COMPANY
Wilmington 99, Delaware

No matter how well you build and insulate your electric fence, it can't do the job unless your controller is dependable. Prime's dependability has been proved on thousands of farms in the past 10 years. See your Prime dealer's high-line and battery models now.
THE PRIME MFG. CO., 1669 S. First Street, Milwaukee 4, Wis.

Prime High-Line Model, approved for safety by Underwriters' Laboratories.

MILKS INTO GLASS
for Supreme Cleanliness!

Clean-Easy
MILKERS

Illustrated is the Clean-Easy glass milk pail now featured on both Trackster and Portable models. Today's favorite with dairy farmers because it's so easy to keep clean and sanitary. See your dealer or write Ben H. Anderson Mfg. Co., Madison 3, Wis., Dept. 234

What's New

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York 18, N. Y.*

Charge Retaining Storage Battery

This Willard CR-2-3 storage battery shown by a conventional 3-cell dry battery has just been placed on the market in hardware, farm equipment and auto battery stores. It is

a six volt battery, different from automobile batteries in that it is designed to maintain high operating voltage at low current drain, as for fence controllers, over a long period. When standing idle it is also claimed to retain its charge for a full year, even in warm weather, without running down. It is claimed to give the service equivalent of a 6 volt dry battery at one charge, and may be recharged 15 times or more. It is recharged the same as other storage batteries except at a lower charging rate. Suggested retail price is $9.95.

Hose Irrigator

This porous hose with open pores is designed to give an even gentle flow of water throughout its length for garden or lawn irrigation. The

flow is slow enough to allow the water to seep into the ground. The duck fabric is treated to make it flame-proof and to protect it against mildew. It is made in two lengths with plastic coupling ready to attach to a standard garden hose. Available from B. F. Goodrich products distributors or from industrial products division of the company at Akron, O. Price 18' length $1.90; 30' length, $2.90.

New Publications

(Publications are obtainable from the addresses given in the description. Some states make small charges for bulletins sent outside the state.)

• FIX IT. 27pp, illus. Ga. Extension Service Bul. 503. Simple instructions with many illustrations telling how to fix fuses, cords, plugs, small heating appliances, motor driven appliances, ranges, refrigerators, kitchen utensils, pressure cookers and sewing machines.

• HAYDRIER. A 4 p. circular telling what it is, why needed, how used, what it will do, its cost, what some users say about it. Agr. Exten. Service, Virginia Poly. Inst., Blacksburg, Va.

An "alphabet" Government expert asked an overworked farmer what time he got up to go to work.

"Son," said the old fellow, "I don't go to work; I wake up surrounded by it."

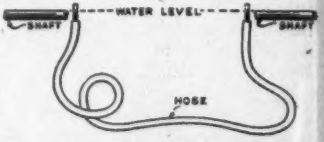
Motor Care

We are in the busy season now. Do not forget to oil your motors and keep them clean. You should have put them in good shape for the season last winter. Little care is needed if you keep them clean and oiled. Do not oil too much. For most small sleeve-bearing motors use SAE 10W lubricating oil. Keep the driven machines oiled, too, so as not to overload your motors.

Run Levels with a Hose

Slip gauge glasses into each end of an ordinary garden hose as indicated in this sketch, and fill with enough water so that the level will show in each glass. You are now ready for any leveling job, and you can do it with accuracy. In the sketch a shaft is shown as an example, but the method is applicable to almost any leveling job.

When filling the hose with water, make sure that all air is out of it. Hold it in a U-position when filling. Do not attempt to fill it by immersing the hose in a tub of water. Also, one end of the hose must not be warmer than the other end when leveling. If



the water at one end is warmer it will be lighter in weight and the level will not be true. In other words, get rid of all air, and use water of the same temperature throughout the full length of the hose.

If you want to determine difference in level between different points on the ground, drive in stakes till the tops are level, then measure down to the ground with a rule.

★ *Buy War Bonds* ★

RUNNING WATER SAVES TIME AND WORK

A BURKS Water System will give you running water where you need it —Will help increase milk and egg production—Put meat on hogs and beef faster—Cut chores and give you extra hours for field work.

BURKS WATER SYSTEMS are famous for dependable service—longer life—and larger capacity. Only one moving part —self priming—easy to install. Both deep or shallow well systems. Write for catalog and prices now.

DECATUR PUMP CO., 13 Elk St., DECATUR 70, ILL.

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SCHLICHTMAN'S U.S. Approved, Pullorum Tested Chicks. Per 100 Prepaid; Leghorns, Rocks, Red, Orpingtons, Wyandottes, Minorcas, $9.90; Assorted $7.95. Free Catalog explaining two-week replacement guarantee. Schlichtman Hatchery, Appleton City, Missouri.

NOW Available

The SURGE Fencer

MODEL A.C.

Certainly, you can buy several cheap fence controllers and not be badly hurt in your pocketbook . . . or, you can buy one good fencer and also not be hurt.

But there is a *difference* . . . a difference in stock control. After all, you DO put up your electric fence to hold your stock, your fence controller is really useful only when you have it and have it in proper working order.

The SURGE A. C. is a full-time fencer . . . on the job when you need it . . . it has the reliability, durability and proved performance that you naturally expect from anything bearing the name Surge.

for SAFE, SURE Stock Control

For SAFETY, for EFFECTIVENESS and for DURABILITY in Electric Fence Controllers, see your SURGE Dealer Today!

BABSON BROS. CO.
2843 West 19th Street, Chicago 23, Ill.

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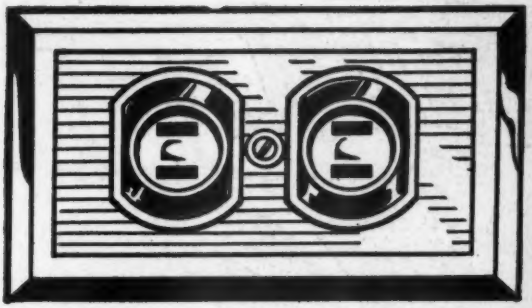
FARM HELP WANTED?

YOUR NEAREST

OUTLET

HAS THE ANSWER



Uncle Sam's request for more milk, meat, eggs and field crops in 1944 presents a real challenge to the farmer, since the shortage of experienced workers will be probably even more acute than last year.

Electricity can help you meet that challenge. It can do many of the laborious and time-consuming jobs around the barn, dairy and house; leaving you free to put time and energy on the work that requires your own skill and experience.

You should get many ideas from this magazine. For further information, ask your Electric Company.

Water pumping, feed cutting, milking machine operation and milk cooling, chick-brooding and water-warming, tool grinding and wood-sawing are only a few of the hundred-odd jobs that electricity can do for you . . . and at low cost.

Your Electric Service Company

Don't Waste Electricity Just Because It Isn't Rationed!

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